Mar. 13, 1923. 1,448,053

C. A. CALVIN

WRENCH

Filed Jan. 25, 1922

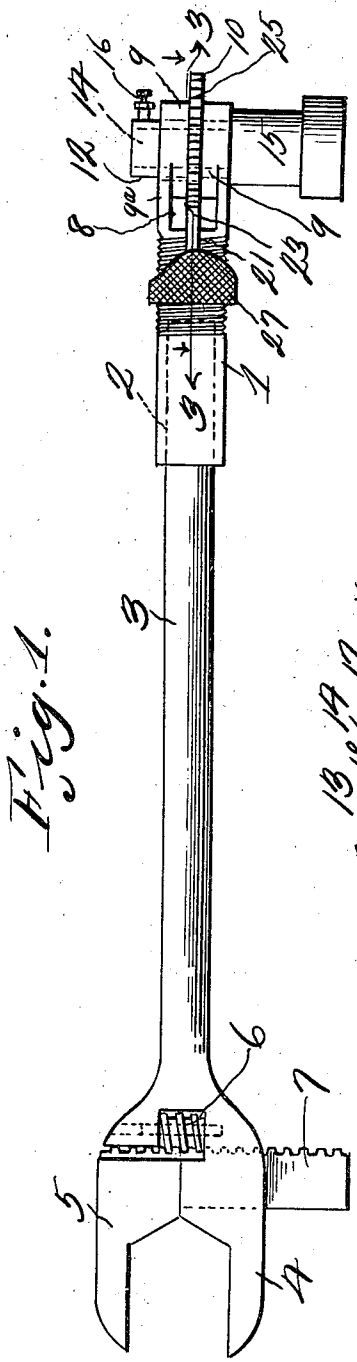


Fig. 1.

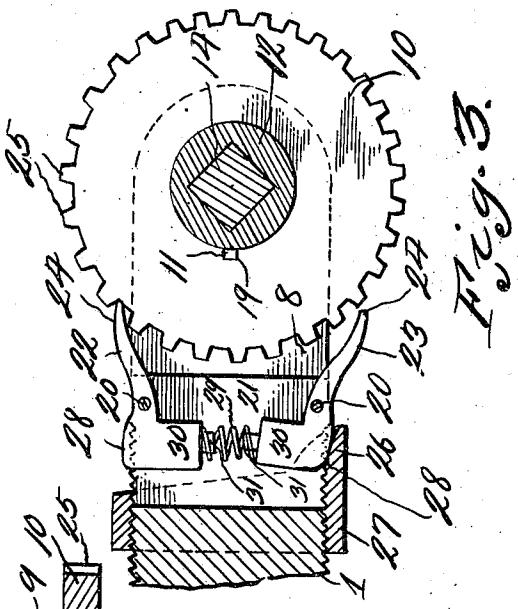


Fig. 3.

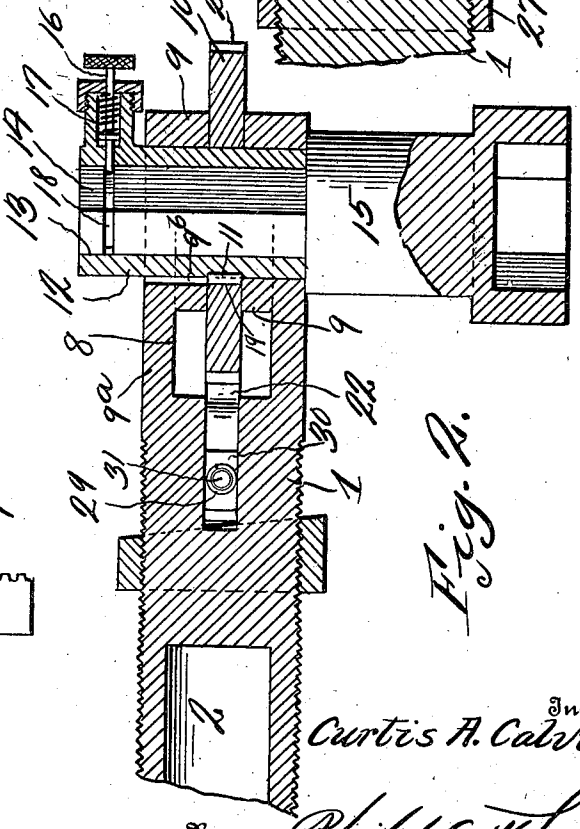


Fig. 2.

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# UNITED STATES PATENT OFFICE.

CURTIS A. CALVIN, OF ST. PAUL, NEBRASKA.

## WRENCH.

Application filed January 25, 1922. Serial No. 531,814.

*To all whom it may concern:*

Be it known that CURTIS A. CALVIN, a citizen of the United States, residing at St. Paul, in the county of Howard and State of Nebraska, has invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to wrenches particularly adapted for use by automobilists and the like, and has for its object to provide a ratchet wrench detachably carried by a handle member, which handle member may be provided with an adjustable end wrench, said ratchet wrench being provided with a rotatable sleeve on its socket, which rotatable sleeve may be positioned for holding one of a pair of dogs out of engagement with the ratchet wheel as desired, thereby allowing the ratchet wheel to be rotated upon an oscillation of the handle. Also to provide a socket in the ratchet wheel, which socket may receive and hold various kinds of tools, such for instance as socket wrenches, screw drivers, of various kinds and shapes or any other tool.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—

Figure 1 is a side elevation of the wrench.

Figure 2 is a vertical longitudinal sectional view through the removable member carrying the ratchet wrench.

Figure 3 is a horizontal sectional view through the ratchet wrench taken on line 3—3 of Figure 1.

Referring to the drawings the numeral 1 designates a cylindrical member, which is relatively short and is provided with a recess 2, which recess receives the handle member 3, by means of which handle member sufficient leverage may be obtained for easily oscillating the member 1. Handle member 3 at its outer end is provided with a jaw 4, with which jaw the slidable jaw 5, actuated through the medium of the adjusting member 6 and the rack 7, cooperates. The wrench carried by the handle member 3 at its outer end is an end wrench and may be adjusted for the reception of various sizes of nuts.

The member 1 is provided with a transversely disposed chamber 8 having inwardly extending bosses 9, and between which bosses the ratchet wheel 10 is disposed. The ratchet wheel 10 has secured thereto by means of a key 11 a sleeve 12, which sleeve is provided with a rectangular shaped aperture 13 which receives the rectangular shaped shank 14 of the socket wrench 15, however it is to be understood that instead of a socket wrench as shown any other tool may be used, which tools are provided with rectangular shaped shanks similar to the shank 14. The upper end of the sleeve 12 is provided with a spring actuated pin 16 controlled by the spring 17, which pin cooperates with a groove 18 in the upper end of the rectangular shank 14 and holds the shank in place in such a manner that it may be easily and quickly removed from the aperture 13 in the sleeve 12. The upper boss 9 and the arm $9^a$ are provided with a vertically disposed groove $9^b$ which allows the key 11 to pass downwardly and into the keyway 19 of the ratchet wheel 10.

Pivotally mounted at 20 within the chamber 21 of the member 1 are ratchet dogs 22 and 23, any one of which dogs may have its nose 24 moved into cooperative position with the teeth 25 of the ratchet wheel 10 through the medium of the extension 26 carried by the sleeve 27 which is threaded on the member 1. It will be seen that when the extension 26 is moved by a rotation of the sleeve 27 into engagement with either of the portions 28 of the dogs 22 or 23, that the dogs will be rocked inwardly against the action of the coiled spring 29 and consequently disengaging the desired dog 22 or 23 and allowing the ratchet wheel 10 to be oscillated in the desired direction for tightening a nut or bolt, or for turning any other tool for instance a screw driver. The rear ends of the dogs 22 and 23 are provided with inwardly extending portions 30 which are provided with lugs 31, said lugs 31 receiving the end convolutions of the coiled spring 29 and preventing displacement thereof.

From the above it will be seen that a wrench is provided which is compact in form, and so constructed that the handle of another wrench may be utilized for operating the ratchet. Also that the ratchet

wrench is so constructed that it is compact in form, may be easily operated and may be stored in a minimum space, thereby making the same particularly adaptable for use of automobilists.

The invention having been set forth what is claimed as new and useful is:—

A wrench comprising a cylindrical body member having a handle receiving socket therein, a ratchet wheel disposed in a bifurcation of the body member, a sleeve disposed in the ratchet and keyed thereto, and provided with rectangular shaped tool receiving aperture, a spring actuated detent carried by the upper end of the sleeve and adapted to cooperate with an annular groove in a tool disposed within the sleeve, a groove in the cylindrical member and in registration in the keyway in the ratchet wheel thereby allowing the sleeve to be placed in position, spring actuated ratchet dogs disposed in the bifurcation and having their noses normally forced into engagement with the ratchet wheel, and a member threaded on the cylindrical body and provided with a finger adapted to cooperate with either dog and hold said dog out of engagement with the ratchet.

In testimony whereof I hereunto affix my signature.

CURTIS A. CALVIN.